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ADVISORY COUNCIL

SUBCOMMITTEE ON MANUAL OF PROCEDURES

Thursday
May 4, 1978
10:00 A.M.

939 Ellis Street
San Francisco
California 94109

M I N U T E S

COMMITTEE MEMBERS PRESENT: Lowell V. Smith, Chairperson; Shirley J. Campbell, Joseph D. Coons, Hiram Wolch.

COMMITTEE MEMBERS ABSENT: John L. Nicholson.

STAFF MEMBERS PRESENT: Gary Bisonett, Gale Karels, Dario Levaggi

- - -

Chairperson Smith called the meeting to order at 10:00 A.M.

APPROVAL OF MINUTES OF APRIL 20, 1978

Mrs. Campbell requested the following corrections:

Page 2, Para. 2 - change J. G. Hayes to Dale Ireson, Union Oil Co.

Page 2, Para. 4 - to read, "On inquiry for Mr. Ireson..."

Page 2, 5.4 - to read, "Dryer/..."

Page 3, Para. 3 - line 2 to read, "of Regulation 8..."

Page 3, 5.2 - line 2, to read, "...for ten liter capacity and fitted with two S.S. valves."

Page 4, 5.2 - line 3, to read, "within...of full-scale..."

Page 4, 6.1 - to read, delete, "setup"

Page 5, 8.2 - line 4, to read, "$(...)^{\frac{1}{2}}$ = Arithmetic...".

Page 5, 2.1 - line 3, to read, "...weighed".

Page 5, 3.2 - delete, "sensitivity" and insert, "repeatability".

Page 6, 5.4, line 1 - insert, "...capable of "maintaining".".

Page 6, 9.2, line 11, to read, "...a constant correcting standard conditions".

Page 7, 5.1, line 3 - correct the spelling of "gauge".

Page 7, 5.3, line 2 - delete the word "is".

Page 7, 2.1, line 2 - delete, "positively".

Page 7, 6.2 - correct the spelling of the word,"gauge".

Page 7, 7.1, line 1 - correct the spelling of the word, "low".

Page 8, 5.3, line 1, to read, "connections. ...".

Mrs. Campbell moved the minutes be approved as corrected; seconded by Mr. Smith; carried.

REVIEW OF SAMPLING GASOLINE TRANSFER OPERATIONS - ST-4

The Committee reviewed ST-4-Bulk Terminals, and made the following corrections thereto:

1.1 - to read, "This method...from vapor recovery systems (VRS)... 5,200,000 gallons...It is for determinations..."

1.2 - add: "This method is primarily intended for the Trico Mk I vapor recovery system. Consult the Source Test Section for applicability to other systems."

2.1 - change to read, "A representative gas sample is continuously..., for determination of hydrocarbon concentrations. A...through a calibrated non-dispersive...The emission factor is determined from the mass emissions of hydrocarbons and the total volume of gasoline delivered."

3.1 - change to, "The...hydrocarbons...".

3.2 - change to, "The...NDIR analyzer shall be...".

5.1 - change "NDIR".

5.2 - change "Chart...".

5.3 - change "Combustible...".

5.4 - correct the words, "Sample", "zero-air", "particulate-free".

5.5 - change to, "Liquid Trap."
first sentence to read, "Use...entrained liquid hydrocarbons..."
delete the last sentence.

5.6 - to read, "Cooling System. Use an ice-bath to contain the impingers."

Renumber previous 5.6 to 5.7 - capitalize, "Particulate".

Renumber previous 5.7 to 5.8 - capitalize, "Pumps."

Renumber previous 5.8 to 5.9 - capitalize, "Back-".
second line, to read, "...zero-air pressures..."

Renumber previous 5.9 to 5.10 - capitalize, "Gas".
second line, to read, "...(or...) and charcoal, ...zero-air..."

Renumber previous 5.10 to 5.11 - capitalize, "Span".
second line to read, "...of butane..."

5.12 - add: Dry meter.

6.1 - to read, "Warm-up the instrument...manufacturer's instructions."

6.2 - to read, "Assemble...shown in Figures 1 and 2."

6.3 - to read, "...starting the sample...and ascertaining".

6.4 - to read, "Introduce zero-air into...instructions."

6.5 - to read, "Introduce span-gas...instructions."

6.6 - second line to read, "...racks, the..., and the vapor recovery unit for leaks."

6.7 - change the work, "recommendations" to "instructions."

7.2.1 - to read, "Initial dry test meter reading."

7.2.2 - to read, "Holding tank diaphragm height".

7.2.3 - to read,"Initial readings from those gasoline pumps which are linked to the vapor recovery system."

7.2.4 - to read, "Dry test meter ...At least once every hour and each time the VRS unit is operating."

7.3 - second line to read, "...flow rate used to calibrate analyzer."

7.4 - to read, "Start...is not in operation."

7.5 - to read, "Every half hour...pressure-vacuum...detector."

7.6 - to read, "Calibrate the...calibration process on the chart."

7.7 - to read, "The test...diaphragm..."

8.1 - to read, "Record the final dry test meter reading."

8.1.2 - change to 8.2 - to read, "Record the...the gasoline pump meters."

9.1 - change V_o to "V_m".

change to read, "...where:

V_m = change in dry test meter reading, ft.^{3}...

1796 = ...conditions and the molecular weight".

Figure 1 - delete that referring to "To Secondary Analysis".
Figure 1, title, hyphenate "Zero-Air and Span-Gas".

REVIEW OF INTEGRATED (ABSORPTIVE) SAMPLING PROCEDURES

The Committee reviewed ST-1B-Ammonia, Integrated Sampling, and made the following changes thereon:

1.1 - second sentence - change, "to" to "for".

2.1 - delete "by gas chromatography".

3. - delete, "and Sensitivity".

5.1 - second line to read, "...wool filter..."

5.4 - second line, delete the word, "vacuum".

5.5 - second sentence to read, "Use approximately...(with... indicator)to insure...dry test..."

5.6 - delete, "gas".

5.8 - to read, "...Use a barometer..."

5.9 - correct the spelling of, "Rotameter".

6.1 - to read, "Hydrochloric acid, 0.1N."

7.1 - delete 0.1N and add the word, "first" before the word "two".

7.3 - to read, "Retain 100 ml of the solution to analyze as a blank for ammonia."

Previous 7.3 - change to 7.4 and delete the second sentence.

Previous 7.4 - change to 7.5 and change the words, "turning on" to "starting"; and in sentence 3, change the words "turning off" to "stopping".

8.1 - second sentence to read, "For batch processes, sample for..."

8.3 - to read, "During the test sample...(0.5 CFM) as determined...
add: "Use the Rotameter only to establish the initial sampling rate. Then remove it from the system."

8.4.3 - change the word, "volume" to "reading".

8.4.4 - delete.

8.5 - change to read, "Add...maintain the temperature exiting the impingers..."

8.6 - to read, "At...each test run,...meter reading."

9.1 - to read, "Stopper the impingers prior to analysis."

9.2 - to read, "Individually analyze the contents of each impinger ...".

9.3 - to read, "Analyzer a blank of the original solution."

10.1 - to read, "V_m = change in dry test meter reading, ft^3".

10.2 - add, "where:

50.1×10^3 = a constant derived from the molar gas volume and molecular wt of NH_3.

11.1 - change "3" to "2".

The Committee reviewed ST-11, Mercaptans, Integrated Sample, and made the following corrections:

1.1 - change "to" to "for".

3. - to read, "Range".

4. - add "Add H_2S."

5.1 - add, "If the stack temperature exceeds 800° use quartz tubing."

5.3 - to read, "An ice bath is..."

5.4 - to read, "...inches of mercury. ...The pump..."

5.5 - to read, "...Use approximately...(with a...) to insure that the gas entering the dry meter is dry."

5.6 - delete, "gas".

5.8 - to read, "...Use a barometer...".

5.9 - correct the spelling of, "Rotameter". (two times)

6.1 - to read, "Mercuric acetate solution. ..."

7.1 - second line to read, "the first two...".

add a new 7.3, to read, "Retain 100 ml of the solution to analyze as a blank for mercaptans."

Previous 7.3 - change to 7.4 and delete the second sentence.

Previous 7.4 - change to 7.5 and change the words "turning on" in line 1 to "starting"; correct the word "must"; change the words "turning on" in the third sentence to, "stopping".

8.1 - second sentence to read, "For sample at...sample for...".

8.2 - insert period at end of sentence.

8.3 - to read, "During the test...of approximately 14.3... (0.5 CFM) as determined by the Rotameter."

8.4.3 - change "volume" to "reading".

8.4.4 - delete.

9.1 - to read, "Stopper the impingers prior to analysis."

9.2 - to read, "Individually analyze the contents of each impinger...".

9.3 - add, "Analyze a blank of the original solution."

10.2 - to read, "C = Mercaptan concentration (as methyl mercaptan), ppm by...

17.7×10^3 = a constant...weight of methyl mercaptan. ..."

11.1 - change "3" to "2".

The Committee discussed ST-13B - Oxides of Nitrogen Integrated Sample, and made the following changes:

1.1 - in sentence 2 change the word, "to" to "for" and correct the spelling of the word "alternate".

2.1 - to read, "...permanganate solution...".

3. - to read, "Range".

4. - to read: None known.

5.3 -to read, "...An ice bath...".

5.4 - delete the word, "vacuum" in the second sentence.

5.6 - delete the word, "gas" in the first line.

5.8 - to read, "Use a barometer that is accurate...".

5.9 - correct the spelling of "Rotameter" and change to read, "Use...Rotameter, or equivalent, to adjust..."

6.1 - to read, "Alkaline permanganate solution."

7.3 - delete the second sentence.

7.4 - change the words, "turning on" in the first line to, "starting"; line 4 change "turning off" to "stopping".

8.3 - to read: Sample at a constant rate of approximately 30.0 liter/Hr (1 CFH) during the test as determined by the Rotameter. Use the Rotameter to establish the initial sampling rate. Then remove it from the system.

8.4.3 - change "volume" to "reading".

8.4.4 - delete.

8.5 - to read, "Add...maintain the temperature exiting the impingers.."

8.6 - to read, "At...each test run,..."..."meter reading."

9.2 - to read: Individually analyze the contents of each impinger for total oxides of nitrogen as NO_2.

Add 9.3 - to read: Analyze a blank of the original solution.

10.1 - to read, "Determine...each test run...".

11.1 - to read: V_m = change in dry test meter reading, ft^3

11.2 - the equation to read, C_{NO_x} =

where: C_{NO_x} =

W =

19.3×10^3 = a constant derived from the molar gas volume and molecular wt of NO_2.

11.3 - the equation to read: $C_{NO_x}, 3\% = C_{NO_x} \frac{17.95}{20.95-\%O_2}$

where:

$\%O_2$ = percent oxygen by volume (dry basis).

Add 12. Reporting

Add 12.1 Report the results on the reporting form shown in Figure 2.

Figure 1 - an addition was made under Impingers; correct the spelling of Desiccant.

Add Figure 2.

The Committee reviewed ST-16, Phenolic Compounds, and made the following changes:

1.1 - second sentence to read: Determine compliance...

3. - to read, "Range".

4. - to read: None known.

5.3 - to read, "...An ice bath is..."

5.4 - to read, "... Use a leak-free...mercury."

5.5 - to read, "...Use approximately...(with a Drierite indicator) to insure...".

5.6 - delete the word "gas".

5.8 - to read, "...Use a barometer...".

5.9 - correct the spelling of the words Rotameter.

6.1 - to read, "6.1 sodium hydroxide, 0.IN (NaOH). Dissolve...".

7.1 - delete 0.IN and add the word,"first" before the word "two".

7.4 - delete the second line.

7.5 - change the words, "turning on" to "starting" in line one; change the words, "turning off" to "stopping" in line four.

7.5 - to read 7.6.

8.1 - second sentence to read, "For batch processes, sample...".

8.3 - to read, "During the test sample...rate of approximately 14.3...Rotameter. Use the Rotameter only to establish the initial sampling rate. Then remove it from the system.".

8.4.4 - delete.

8.5 - to read, "Add...maintain the temperatures exiting the impingers..."

8.6 - change the word "volume" to "reading". correct "conclusion".

9.1 - to read: Stopper the impingers prior to analysis.

9.2 - to read, "Individually analyze the contents of each impinger for...as Phenol, according...

10.1 - to read: V_m = change in dry test meter volume, ft^3

10.2 - to read:

$$C = \frac{9.07 \times 10^3}{V_o}$$

where: C = ...
W = ...

add:

9.07×10^3 = a constant based on the molar volume and mulecular wt of phenol.

11.1 - change "3" to "2".

Figure 1 - delete the drawings under Impingers, and correct the spelling of Desiccant.

The Committee reviewed ST-20, Sulfur Dioxide, Sulfur Trioxide, Acid Mist, and made the following changes:

1.1 - second sentence to read, "It determines compliance...".

1.2 - change "to" in line 3 to "for".

2.1 - third sentence to read, "Sulfur trioxide is absorbed in an 80%...".

3. - to read, "Range".

3.1.1 - to read: Acid mist - 0.0002 gr./ft^3

3.2 - to read, "...method are listed below:"

3.3 - delete.

4.1 - to read: Acid Mist. Other strong acids cause possible interference.

4.2 - correct "IPS" to "IPA". This section to be rewritten later.

5.1 - to read, "Use...probe long enough...".

5.5 - to read, "...ice bath is..."

5.6 - delete the word, "vacuum" in the second line.

5.7 - to read, "...Use approximately...(with...indicator) to insure...".

5.8 - eliminate the word "gas" in the first line.

5.10 -to read, "Use a barometer...".

5.11 - correct the spelling in the words "Rotameter".

6.1 - to read, "Isopropanol, 80% by volume. Prepare...".

6.2 - to read: Hydrogen peroxide solution, 3% by volume.

7.1 - to read, "Add...the IPA solution to...".

7.2 - to read, "Add...of the third and fourth impingers."

7.4 - to read, "Retain 100 ml of each solution to analyze as a blank."

7.4 - change to 7.5, and delete second sentence.

7.5 - change to 7.6, and change the words,"turning on" in line one to "starting"; change "turning off" to "stopping" in line four.

8.4 - add a new sentence reading: Use the Rotameter only to establish the initial sampling rate. Then remove it from the system.

8.5.4 - delete.

8.7 - to read, "Add...to the temperature exiting the impingers...".

8.8 - change the word, "volume" to "reading".

9.2 - to read, "Keep the two IPA solutions on ice...".

9.3 - to read, "Analyze the IPA solution within...".

11.1 - V_o = to read, "corrected...SDCF at 70°F and 29.92 inches Hg."

V_m = to read, "change in dry test meter reading, ft^3.

add:

17.71 = a constant correcting to standard conditions.

11.2 - add: 15.5 = correction from grams to grains

11.6 - add: 1.33×10^{4} = a constant based on the molar volume and molecular wt of SO_2.

11.7 - correct the spelling of "sample".

11.8 - correct the spelling of "flow rate"

12.1 - change,"3" to "2".

REVIEW OF CONTINUOUS INSTRUMENTAL SAMPLING AND ANALYSIS - ST-5, ST-6, ST-14

Time did not permit discussion.

TIME AND PLACE OF NEXT MEETING

10:00 A.M., Thursday, May 25, 1978, 939 Ellis Street, San Francisco, California.

The meeting adjourned at 12:00 noon.

Respectfully submitted,

Mabel Harder
Secretary

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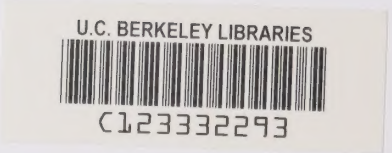

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